Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the editor

Telemedicine use during the COVID-19 lockdown is associated with fewer depressive symptoms among physicians in private practice

The use of telemedicine increased exponentially during the COVID-19 pandemic. At the same time, the mental health of physicians was impacted, with increased burnout as well as symptoms of anxiety and depression [1].

The use of telemedicine has been associated with physician and patient satisfaction [2,3]. However, some physicians reported increased satisfaction with tele-visits over in-person visits. In telepsychiatry, attending to non-verbal communication and maintaining empathy requires increased mental effort, making the provider experience more sensitive to cumulative fatigue effects [4,5].

Whether the use of telemedicine is associated with the mental health of clinicians remains to be assessed. Thus, we aimed to compare the prevalence of depressive and anxiety symptoms and burnout between telemedicine users and non-users among physicians in private practice.

During the second lockdown, we performed a national study on the mental health of outpatient physicians in private practice in France (November 2020) [6] using the Hospital Anxiety and Depression Scale (HAD) [7], the Insomnia severity Index (ISI) [8], and the Copenhagen Burn-out Inventory (CBI) [9]. For each subscale of the HAD (HAD-Depression (HAD—D) and HAD-Anxiety (HAD-A)), we selected cut-off scores from the literature: >7 and > 10, respectively [10]. Among the 1992 physicians who answered the survey, 59% had anxiety symptoms, 27% depressive symptoms, 46% clinical insomnia, and 71% a burnout syndrome [6]. Descriptive statistics were provided for age range, sex, and medical specialty. Chi-square tests were used to compare prevalences between telemedicine users and non-users. Logistic regression models adjusted for age, sex, and medical specialty were performed to control for potential confounding introduced by these variables. Approval for this study was obtained from the local institutional review board at the University of Paris-Saclay, France.

Among the 1992 physicians, 1291 (64.8%) were telemedicine users. Compared to non-users, telemedicine users were significantly younger (59.0% <50 years old versus 53.6%), more frequently women (60.5% versus 53.2%), and more often medical specialists (54.4% versus 45.6%) (Table 1).

After adjusting for age, sex, and medical speciality, telemedicine use was associated with fewer depressive symptoms (HAD-D > 7) and less possible depression (HAD-D > 10). There was no association between telemedicine use and anxiety symptoms, insomnia, or burnout (Table 1).

This study is the first to assess the association between telemedicine use and physician mental health. Compared to non-users, telemedicine users were younger, more frequently women, and more often medical specialists. Among physicians in private practice assessed during the COVID lockdown, we show that telemedicine use is independently associated with fewer depressive symptoms and lower possible depression. Regarding our transversal and observational design, we cannot conclude about causality. Indeed, it is possible that telemedicine use during the lockdown may have contributed to maintaining medical activity in safe conditions with a protective effect against depressive symptoms. It is also possible that physicians with depressive symptoms may have experienced difficulties implementing telemedicine in their practice. Thus, this study needs to be replicated in an independent sample. Further studies should assess whether telemedicine use protects physicians from depressive symptoms in stressful conditions such as a pandemic.

Table 1
Characteristics of mental health symptoms among physicians in private practice using telemedicine or not.

	Telemedicine non-users (n = 701)	Telemedicine users (n = 1291)	P	Adjusted OR [95%CI] *	P
Women [n(%)]	373 (53.2)	781 (60.5)	**0.002**	**1.30 [1.07;1.58]**	**0.008**
>50 years [n(%)]	325 (46.4)	529 (41.0)	**0.02**	0.87 [0.72;1.05]	0.15
Medical Specialists [n(%)]	252(35.9)	702(54.4)	**<0.001**	**2.13 [1.76;2.56]**	**<0.001**
Depressive symptoms (HAD-D > 7) [n(%)]	201(28.7)	331(25.6)	0.144	**0.76 [0.60;0.96]**	**0.02**
Anxiety symptoms (HAD-A > 7) [n(%)]	405(57.8)	769(59.6)	0.438	1.03 [0.82;1.30]	0.78
Possible depressive disorder (HAD-D > 10) [n(%)]	201(28.7)	331(25.6)	**0.01**	**0.57 [0.42;0.79]**	**0.001**
Possible Anxiety disorder (HAD-A > 10) [n(%)]	405(57.8)	769(59.6)	0.58	1.09 [0.87;1.37]	0.47
Clinical insomnia [n(%)]	314 (44.8)	599 (46.4)	0.50	1.20 [0.97;1.48]	0.09
Burnout [n(%)]	485(69.2)	935(72.4)	0.13	1.07 [0.85;1.35]	0.58

Legend: * Adjusted for age, sex, and specialty. **Bold**: $p < 0.05$; HAD—D: Hospital Anxiety and Depression Scale-Depression; HAD-A: Hospital Anxiety and Depression Scale-Anxiety.

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CRediT authorship contribution statement

Ariel Frajerman: Formal analysis, Writing – original draft, Software. **Romain Colle:** Formal analysis, Writing – original draft, Supervision. **Emmanuelle Corruble:** Validation, Visualization. **Jean-François Costemale-Lacoste:** Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Resources, Formal analysis, Writing – original draft, Software, Supervision.

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Ariel Frajerman[a,b,*], Romain Colle[a,b], Emmanuelle Corruble[a,b], Jean-François Costemale-Lacoste[a,c]

[a] *MOODS Team, INSERM U1018, CESP, Université Paris-Saclay, Faculté de Medicine Paris-Saclay, Le Kremlin Bicêtre F-94275, France*

[b] *Service Hospitalo-Universitaire de Psychiatrie de Bicêtre, Mood Center Paris Saclay, Assistance Publique-Hôpitaux de Paris, Hôpitaux Universitaires Paris-Saclay, Hôpital de Bicêtre, F-94275, France*

[c] *Service Hospitalo-Universitaire des Pathologies Psychiatriques Résistantes, Z19, Centre hospitalier le Vinatier, 95 boulevard Pinel, F-69678 Bron Cedex, France*

[*] Corresponding author at: Department of Psychiatry, Bicêtre Hospital, 78 rue du General Leclerc, 94230 Le Kremlin Bicêtre, France.
E-mail address: ariel.frajerman@inserm.fr (A. Frajerman).